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supposed, but a mixture of the colorless mercuri-ammonium compound with very finely divided metallic mercury.

N. TARUGI, who introduced the use of thioacetic acid as a substitute for hydrogen sulfid in the laboratory, has, in the *Gazzetta chimica italiana*, a study of the action of thioacetic acid on salts of bismuth. The thioacetate of bismuth is decomposed by a small amount of water with the formation of a thiobasic salt $(\text{CH}_3\text{COS})_3\text{BiS}$, and this on treatment with sulfuric acid gives a sulfate $(\text{CH}_3\text{COS})_3\text{BiSO}_4$, and on treatment with iodine the corresponding iodid. These new compounds are of interest as being the first compounds of quintivalent bismuth in the marsh-gas series.

J. L. H.

SCIENTIFIC NOTES AND NEWS.

THE Senate has agreed to the provisions in the tariff bill admitting free of duty books in print more than twenty years, books in foreign languages and such as are devoted to scientific research, and books and scientific instruments imported for public and educational institutions.

PERHAPS the most noteworthy additions to the United States National Museum during recent years have been the rich collections of pre-historic pottery, made in the pueblo region, during the last two seasons, by Dr. J. Walter Fewkes, of the Bureau of American Ethnology. The success attending his operations in the past has led to a provision for continuing the work, and he has recently set out to the field for the third time. His design is to survey and excavate the ruins known among the Indians as Kintiel, near Navajo Springs, Arizona. He is accompanied by Dr. Walter Hough, of the United States National Museum.

THE keen appreciation of the importance of research on the part of Secretary Wilson has already given fresh impetus to various lines of scientific work in the Department of Agriculture. The more important operations are carried forward without change of personnel; it seems to be the policy to maintain and

strengthen the bureaus built up through the zeal and ability of well-known scientific men; and, at the same time, scientific character is given to certain of the lines of work hitherto regarded as administrative. One of the recent changes is the appointment of Mr. John Hyde as Statistician of the Department. Mr. Hyde became widely known through his connection with the Eleventh Census, and he has more recently been known in scientific circles as editor of the *National Geographic Magazine* and as a writer on political economy.

MAJOR J. W. POWELL is on the coast of Maine, engaged in researches concerning shell mounds, in the interest of the Bureau of American Ethnology.

PROFESSOR SOUILLARD, astronomer at Lille, has been elected a corresponding member of the Paris Academy of Sciences.

DUBLIN University has conferred the degree of D. Sc., on Professor William Ramsay, Major P. A. M'Mahon, D.D., and Professor Wilhelm His, of Leipzig.

DR. RUDOLPH LEUCKART and Dr. Karl Neumann have been made Knights of the Prussian Order of Merit in Science and Art.

THE Royal College of Surgeons of England has conferred the John Tomes prize on Mr. C. F. Tomes, F. R. S.

THE *Naturwissenschaftliche Rundschau* states that, at a recent meeting of the Academy of Sciences of Vienna, Ritter v. Arneth was reelected President; Dr. Suess, Vice-President; Professor Huber, General Secretary, and Dr. Hann, Secretary of the Mathematico-Physical Section. Dr. Gautsch v. Frankenthurm and Dr. Exner, of Innsbruck, were elected corresponding members; Lord Lister, honorary foreign member; and Dr. Vogel, of Pottsdam; Herr Karpinsky, Director of the Geological Institute of St. Petersburg; Dr. Gegenbauer, of Heidelberg, and Herr Brioschi, of Milan, corresponding members.

M. LE GÉNÉRAL DE TILLO announced at a recent meeting of the Paris Academy of Sciences that the sum of 25,000 francs had been subscribed in Russia to the Lavoisier monument fund.

M. FALGUIÈRES has been commissioned to design the Pasteur statue to be erected in Paris, for which 297,000 francs has been subscribed.

THE United States Civil Service Commission will hold an examination on July 20th to establish a register of eligibles for the position of industries in the Indian school service. The subjects of the examination will be penmanship, spelling, methods of manual training, arithmetic, geometry, geography, industrial economy, mechanical or industrial drawing (one optional), free-hand drawing and physics. There is a vacancy at the Indian school at Perris, Cal., the salary of which is \$840 per annum.

WE regret to record the deaths of DeVolson Wood, professor of mechanical engineering at the Stevens Institute of Technology, Hoboken, New Jersey, on June 27th, at the age of sixty-five years; of Professor Julius von Sachs, on May 29th, at the age of sixty-five years; of the Rev. Alexander Freeman, on June 12th, at the age of fifty-eight years. Mr. Freeman was at one time deputy for the Plumian professorship of astronomy at Cambridge, and was a fellow of the Royal Astronomical, Mathematical and Physical Society; of Dr. Peter Von Tunner, at the age of eighty-nine. Dr. Von Tunner founded, in 1840, the school of mines at Leoben, in Styria, and was the author of many contributions on the metallurgy of iron and steel.

THE London *Times* reports that Dr. Wölfert and an assistant named Knabe were killed on June 12th while making trial of a navigable balloon invented by Dr. Wölfert. The balloon was being exhibited at Berlin before the officers of the ballooning section of the army, when the gas was ignited by the benzine used in the motor.

COMMISSIONER HERRMANN, of the General Land Office, has, it is said, submitted to the Secretary of the Interior a report regarding the rules and regulations for the government of the forest reserves, with special reference to the parts available for mining, grazing and agriculture.

It is said that the Legislatures of the States of New York and New Jersey will be asked at

their next sessions to provide for the building of a broad roadway 15 miles long at the base of the Palisades and to protect them from injury by quarrying.

WE are glad to learn that on June 19th a Zoological Club was organized at Springfield with nineteen members. The first officers are: President, W. W. Colburn; Secretary, Miss M. A. Young; Treasurer, Miss L. I. Mattoon; and Dr. George Dimmock and Miss M. A. Booth, additional members of the Executive Committee.

THE Park Board of New York City has adopted the plans for the buildings of the new Botanical Gardens in Bronx Park, as modified by the directors in accordance with the advice of a committee consisting of Professor Sargent and Messrs. Olmsted, Hastings and Parsons.

THE library of Columbia University has received from an anonymous donor 387 books, valued at \$6,000. These include a number of valuable works in natural history, such as Audubon's *Quadrupeds*, Sepp's *Nederland'sche Insekten*, Gould's *Humming Birds* and Levaillant's *Oiseaux d'Afrique*.

It is stated in *Die Natur* that Dr. O. Zacharias reported at a recent meeting of the Saxon Fisheries Association that the Prussian government would, after October of next year, give assistance to the biological station at Plön.

THE Boston *Transcript* states that an expedition under the charge of Mr. C. M. Harris, of Augusta, Me., has sailed from San Francisco for the Galapagos Islands, with a view to studying their fauna and flora. It is said that Messrs. E. D. Hall, of Dartmouth; F. P. Duowle, of Providence, and R. I. Beck and R. H. Beck, of California, are members of the expedition, and that the expenses are defrayed by Mr. Walter Rothschild.

THE Australasian Association for the Advancement of Science will, as we have already announced, hold its seventh session at Sydney, commencing January 6, 1898. Professor A. Liversidge is the President-elect. The President and officers of the several sections are as follows:

Section A—Astronomy, Mathematics and Physics. President, R. L. J. Ellery, C.M.G., F.R.S.; Secre-

taries, Professor A. Threlfall, M.A., J. Arthur Pollock, B.Sc.

Section B—Chemistry. President, T. C. Cloud, A.R.S.M., F.I.C., F.C.S.; Secretary, W. M. Hamlet, F.I.C., F.C.

Section C—Geology and Mineralogy. President, Captain F. W. Hutton, F.R.S., F.G.S.; Secretaries, Professor T. W. E. David, B.A., F.G.S., E. F. Pittman, A.R.S.M., F.G.S.

Section D—Biology. President, Professor T. J. Parker, D.Sc., F.R.S.; Secretaries, Professor W. A. Haswell, M.A., D.Sc., F.L.S., J. H. Maiden, F.C.S., F.L.S.

Section E—Geography. President, to be appointed. Secretary, H. S. W. Crummer, Secretary Royal Geographical Society of Australasia.

Section F—Ethnology and Anthropology. President, A. W. Howitt, F.G.S.; Secretary, John Fraser, B.A., LL.D.

Section G—Economic Science and Agriculture. President, R. M. Johnson, F.L.S.; Secretaries, R. R. Garrahan, B.A., F. B. Guthrie, F.C.S.

Section H—Engineering and Architecture. President, H. C. Stanley, M.I.C.E.; Secretaries, J. W. Grimshaw, M.I.C.E., M.I.M.E., H. C. Kent, M. A.

Section I—Sanitary Science and Hygiene. President, Hon. Allan Campbell, M.L.C., L.R.C.P.; Secretary, Dr. F. Tidswell, M.B.

Section J—Mental Science and Education. President, John Shirley, B.Sc.; Secretary, Professor Francis Anderson, M.A.

THE business meeting of the British Medical Association will be held in London on July 27th, to discuss the reports of the Council and of the various committees, and will then adjourn for the meeting at Montreal, beginning on August 31st. The meeting at Montreal, the first to be held outside the United Kingdom, promises to be very successful. The Dominion government has voted a sum of £1,000 to the reception fund, the government of the Province of Quebec £500, and other public bodies have been equally generous. The *British Medical Journal* has published an extended list of those who have signified their intention to be present, including the names of many eminent British physicians and men of science.

THE current number of *Nature* contains the first of a series of articles by the editor, Professor Norman J. Lockyer, on the approaching total eclipse of the sun. It appears that the weather

prospects of the eclipse to be observed in India on January 22d of next year, are extremely favorable. The meteorological reporter to the government of India states that the chances of any given day in January being rainy in Konkan is less than one in one hundred and fifty. The Joint Committee of the Royal and Royal Astronomical Societies have determined to send out three parties to observe, one on the coast and two inland, at stations to be subsequently decided upon. It has been arranged that the party from the Solar Physics Observatory will occupy the coast station if the Admiralty can grant the use of a man-of-war to allow an attempt to be made to repeat the *Volage* programme of 1896. In this case the station will possibly be the old fort at Vizadurg. The land parties, which will include the Astronomer Royal, Professor Turner and Mr. Newall, representing the Observatories of Greenwich, Oxford and Cambridge, together with Dr. Common and Captain Hills, occupy stations near the central line on the railways shown on the map (Fig. 1).

It is reported in the daily papers that Dr. David Starr Jordan stated before leaving for Alaska that, as the British government has not come to satisfactory terms with the United States for the protection of fur seals in Bering Sea, the United States will begin this summer, through the Fur Seal Commission, the work of branding the female seals in the Pribilof Islands. This will spoil the skins of branded seals and stop pelagic sealing by making it unprofitable. One of Dr. Jordan's assistants, Elmer Farmer, expert electrician, has invented an electrical machine for branding seals, and if it prove satisfactory it will do a great deal toward settling the seal question. There is a possibility that the female seals may be coralled on one of the islands during the sealing season.

AN International Congress of Technical Education took place in London on June 15th, 16th, 17th and 18th. M. Saignat, the retiring President, made some remarks in introducing the President, the Duke of Devonshire, who addressed the Congress at length. Papers were presented by Professor Otto N. Witt, of the Berlin Polytechnic Institute; Dr. H. E. Arm-

strong, Sir Henry Roscoe, Professor G. Lunge of Zurich, Mr. G. R. Redgrave and others. The United States appears not to have been represented by delegates.

A DECREE has been signed by the President of the French Republic regarding medical experts before the Courts of Algeria. It appears that such experts must be appointed at the beginning of each year, and receive a fixed compensation for such services as are rendered.

UNIVERSITY AND EDUCATIONAL NEWS.

THE will of the late Dr. George Edwards leaves \$50,000 to Princeton University for the endowment of a chair in American History and \$2,500 for other purposes.

AT the commencement exercises at Beloit College, Dr. G. K. Pearsons presented the College with \$30,000 to build a woman's hall. Dr. Pearson's previous gifts to the College amount to \$250,000.

PRESIDENT SEELEY announced at the commencement exercises of Smith College that \$10,000 had been offered to the College for the erection of a building for the scientific laboratories on condition that \$9,000 should be subscribed by the alumnae.

UPON the recommendation of the Faculty of the College of Physicians and Surgeons, Columbia University, the title of the chair of chemistry and medical jurisprudence was changed to that of physiological chemistry. The chair has not yet been filled.

DR. THOMAS S. FISKE, adjunct professor in mathematics in Columbia University, has been promoted to a full professorship.

PROFESSOR M. V. O'SHEA, of the Buffalo School of Pedagogy, has been appointed to the chair of pedagogy in the University of Wisconsin.

THE trustees of Oberlin College have elected as President, Dr. William Slocum, now President of Colorado College.

DR. FUCHS has been promoted to an associate professorship of paleontology in the University at Munich. Dr. G. Boccardi has been appointed associate professor of microscopical anatomy at the University of Naples, and Dr. J. Szadowski

associate professor of geology at the University at Klausenburg. Dr. E. Wiechert has qualified as docent in physics at the University at Göttingen, Dr. Adolf Marcuse as docent in astronomy in the University of Berlin, and Dr. Max Dettrich as docent in chemistry in the University at Heidelberg.

DISCUSSION AND CORRESPONDENCE.

PALEONTOLOGICAL AND EMBRYOLOGICAL METHODS.—A REJOINDER.

ALTHOUGH I would have preferred to postpone the discussions on the systematic position of *Tarsius* which was commenced a few months ago (*SCIENCE*, February 12th, April 2d, April 23d) till the publication of a more extensive memoir which is at present in preparation, I may yet be allowed to say a few words in reply to Mr. Earle's "claim that the paleontological method in determining phylogeny is more nearly accurate than the embryological, as in the latter many characters are lost and innumerable cænogenetic variations are introduced which the embryologists often cannot distinguish from real homogenetic structures."

Leaving aside the somewhat loose constructions as to a 'method' in which 'characters are lost and 'variations introduced,' and considering it to be the writer's intention to point out to us that the facts which are brought to light by embryological research are for many reasons less reliable than those which we owe to paleontological science, I would wish the readers of *SCIENCE* to follow up that line of reasoning a little more closely. For it would seem to me that if we run a great risk of going astray in comparing the characters of the early embryos with each other because these characters are influenced by 'cænogenetic variations,' it is *a fortiori* none the less dangerous to compare the adult structures which develop out of these embryonic rudiments and upon which the same caution should necessarily be brought to bear. In that respect a paleontologist can hardly be said to be in a safer corner than an embryologist.

When, however, the embryologist wishes to construct phylogenetic trees out of his ontogenetical data I quite agree with Mr. Earle